

INTRODUCTION

This equipment is designed to feed and retract a high pressure hose and nozzle into a tube or pipe while rotating the hose and nozzle to achieve full internal coverage during the cleaning process.

CAUTION: A separate control valve for the high pressure water supply **must** be used in conjunction with the operation of this equipment.

I. PRINCIPLES OF OPERATION

This equipment has three air powered functions controlled by two air logic circuits. The Control Gun (see Fig. I-A) is connected to the unit by a 15 ft. umbilical hose to permit the operator maximum mobility during operation.

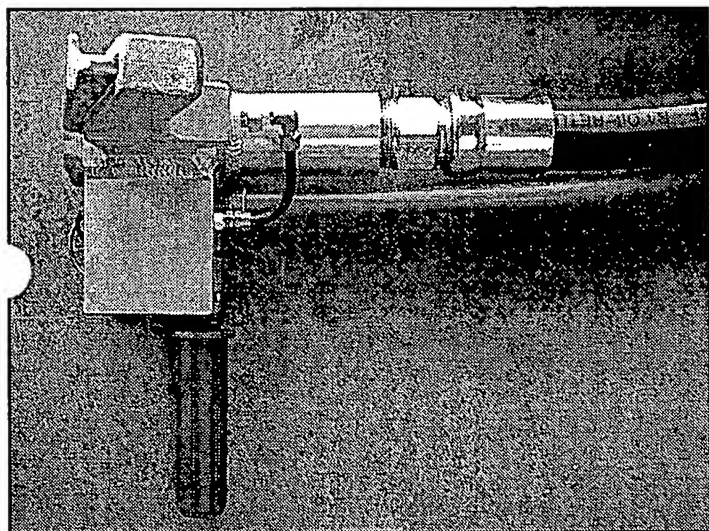


Fig. I-A

The "Rotation" function controls the rotation of the nozzle. The regulators for both functions are mounted on the unit.

The "Extend/Retract" circuit controls the two motors used to extend and retract the hose. The drum motor controls the hose reel and the inch roller motor drives the foam filled tires that push the hose into the tube or pipe being cleaned.

ATTENTION! Synchronization between the drum motor and the pinch roller motor is absolutely required for the **safe** and **effective** operation of this equipment. (See "Set-Up" for details.)

The pinch rollers also assist in retraction of the

hose. However, the reel motor is the primary power source for the "Retract" operation.

The small filter near the primary air supply connection (see Fig. I-B) is for the pilot air (air logic) circuit. Due to the small reservoir on this filter, if air supply permits, it is usually advisable to leave the drain

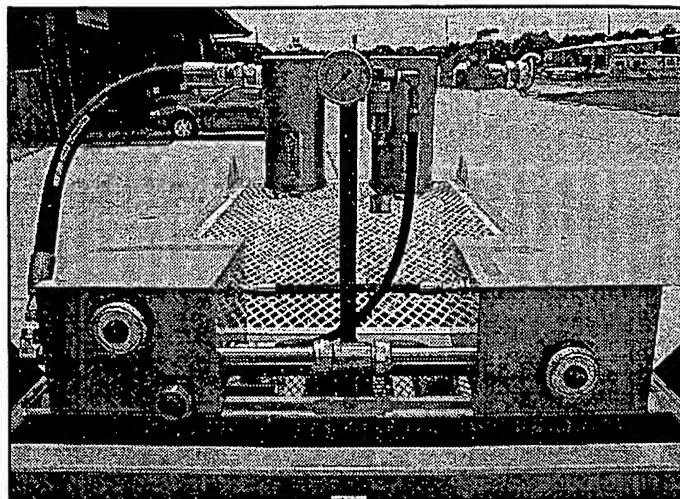


Fig. I-B

partially open during operation so that a "continual purge" is achieved. This pilot air is used to control both the power valves for the motors as well as the piloted (slave) regulators for speed control. The filter for the power circuit is equipped with an automatic drain. However, the sight glasses should be monitored periodically to be sure that the automatic drain is functioning.

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II. SET-UP

After connecting the high pressure water supply (from a control valve) to the inlet swivel, the flexlance nozzle should be removed and the entire system flushed.

After flushing the system, replace the nozzle and pressure test for leaks.

CAUTION!! Never attempt to tighten a connection under pressure. If a leak occurs, dump the system pressure and effect repairs immediately.

Connect main air supply and synchronize pinch roller and drum motors.

NOTE: When the air supply for this equipment varies (either from one job to the next or during a job) the synchronization between these motors may need adjustment in order to maintain safe and optimum operation.

The synchronization process is quite simple if the circuit design concept is understood. The flow control valves (3/4 ADJ VALVE) shown on drawing RO-5 are used to slow the speed of their respective motors in order to keep a slight tension on the hose during the extend and retract operations.

As the available air supply and loads change, readjustment of these valves may be necessary.

After the air supply is connected, set the extend/retract regulator to the approximate speed desired for the cleaning operation. While extending the lance, observe the hose between the reel drum and the pinch rollers.

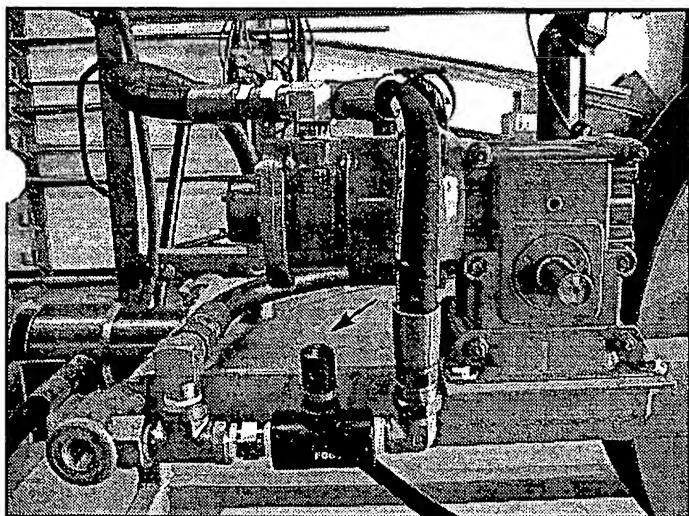


Fig. II-A

The hose should have a slight amount of tension during operation. If the hose is not being slightly pulled off the reel, the flow control to the drum motor (Fig. II-A) should be closed slightly (turn clockwise) to reduce the drum motor speed. Conversely, if the hose seems overly taut, the valve should be opened (turn counter-clockwise) slightly.

NOTE: Adjustment in small increments until the condition is reversed and a 1/4 turn back in the opposite direction will usually produce the desired results.

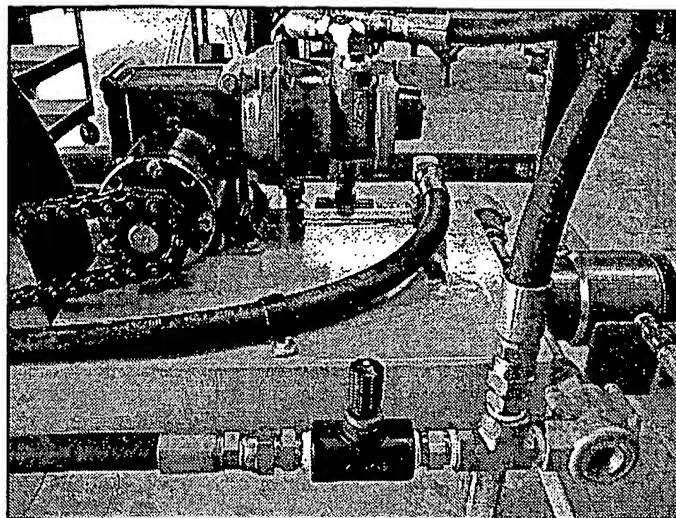


Fig. II-B

After the extend function is adjusted, observe the hose during retraction. If the pinch rollers are retracting the hose faster than the drum is rolling it on, slightly close the valve (Fig II-B) that controls air flow to the pinch roller motor. If the tension seems excessive, opening that valve will increase the pinch roller speed and reduce the load on the load on the drum drive motor.

After the adjustments are made, the unit should be tested again with the rotation motor operating. In conditions where the air supply is marginal, the air consumed by the tumble (rotation) motor may require that additional minor adjustments be made.

III. MAINTENANCE

- 1) Check drip rate and fluid level in lubricators every 3-4 hours. (Use air tool oil or ATF. Do **not** use Marvel Mystery Oil.)
- 2) Maintain swivels per enclosed instruction manuals.
- 3) Grease cradle bearings and drum bearings every 150-200 hours of operation.
- 4) Change gear oil in gear reducers every 1,000 hours.
- 5) Replace o-rings in dual port swivels only as required.

Bill Of Materials

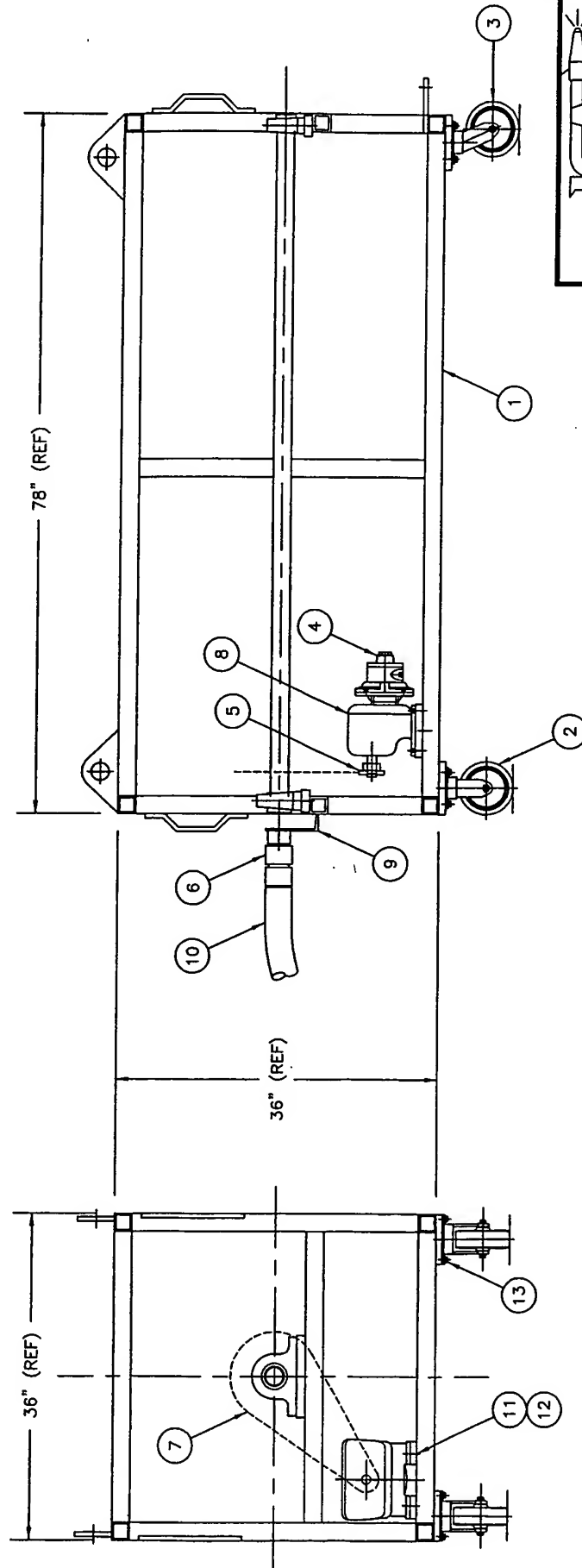
ITEM #	PCS	QTY	PART NO.	DESCRIPTION	WGT.
1	1	1	FR783636	FRAME WELDMENT	
2	2	2	CIPE08RG	CASTER POLYURETHANE 8" RIGID	
3	2	2	CIPE08SW	CASTER POLYURETHANE 8" SWIVEL	
4	1	1	AMG5T4AM	AIR MOTOR GAST 4AM 8 VALVE	
5	1	1	SP60BS14	SPROCKET 60BS14 1" BORE	

Bill Of Materials

ITEM #	PCS	QTY	PART NO.	DESCRIPTION	WGT.
6	1	1	KP24F24M	KAMLOCK 1 1/2" F x 1 1/2" NPT	
7	1	1	CHN0060	CHAIN #60	
8	1	1	WW64Z719	GEAR REDUCER 12.5:1 C-FACE	
9	1	1	RLC00110	MOUNTING BRACKET GUIDE HOSE	
10	1	1	GHC2412X	GUIDE HOSE 1 1/2" x 12'	

Bill Of Materials

ITEM #	PCS	QTY	PART NO.	DESCRIPTION	WGT.
11	4	4	N/A	HH BOLT 3/8-13 UNC x 1 1/4 LG	
12	4	4	N/A	LOCK NUT 3/8-13 UNC	
13	16	16	N/A	HH BOLT 1/2-13 UNC x 3/4 LG	



JSA
 JETTING SYSTEMS & ACCESSORIES, INC.
 4026 TREY
 HOUSTON, TEXAS 77084
 ROTARY LINE CLEANER

TOLERANCES
 UNLESS OTHERWISE SPECIFIED
 FRACTIONS ±1/64
 DECIMALS ±.005
 ANGLES ±.005
 UNLESS OTHERWISE SPECIFIED
 FRACTIONS ±1/64
 DECIMALS ±.005
 ANGLES ±.005
 UNLESS OTHERWISE SPECIFIED
 FRACTIONS ±1/64
 DECIMALS ±.005
 ANGLES ±.005

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FRAME ASSEMBLY - 10K

DRAWING NO.

FRAM7510

DATE: 07/28/00

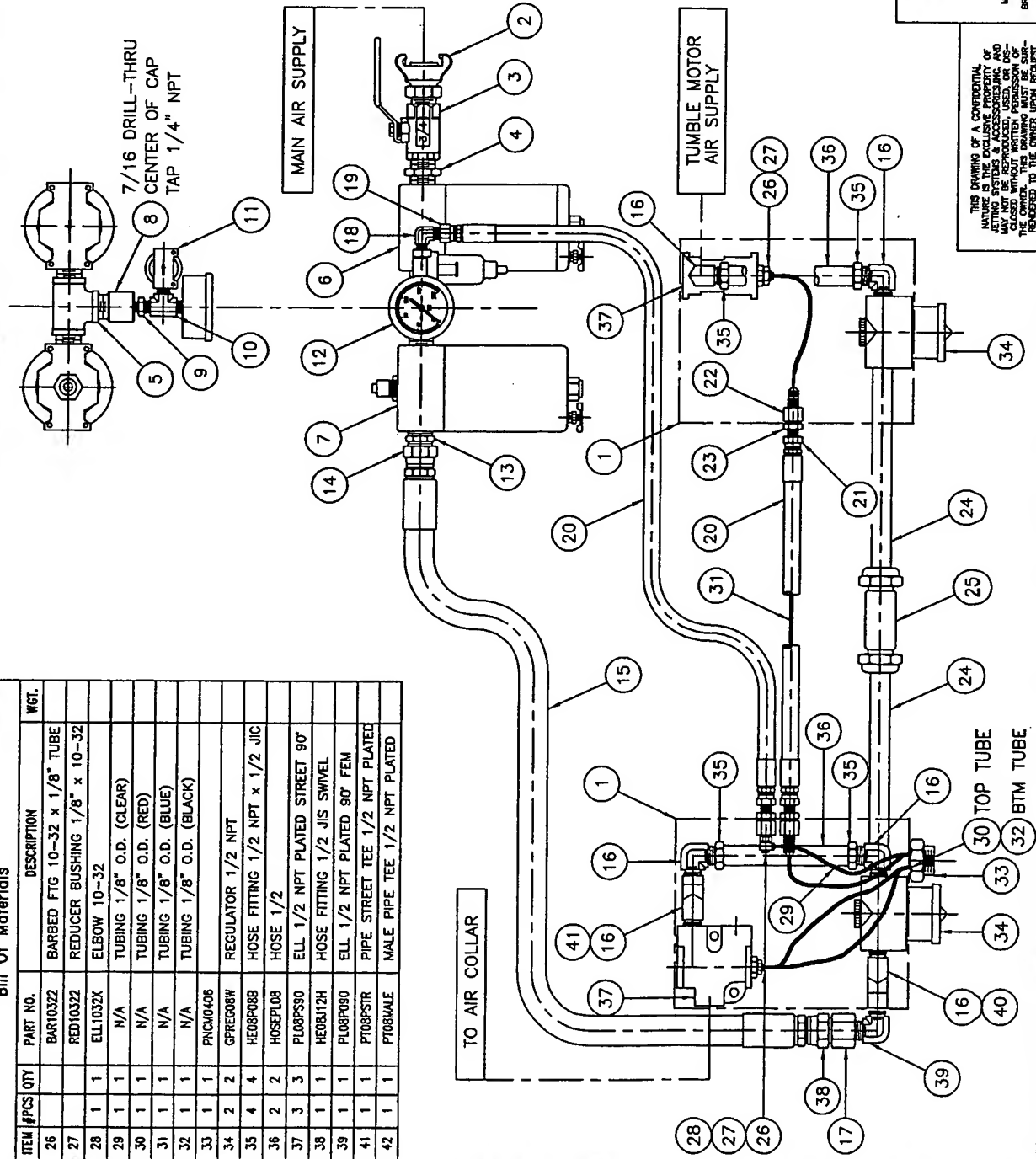
SHT. 1 OF 1

LCR:FRAM7510

REV. 0

Bill Of Materials

ITEM #	QTY	PART NO.	DESCRIPTION	WGT.
26		BART0322	BARBED FTG 10-32 x 1/8" TUBE	
27		REDI0322	REDUCER BUSHING 1/8" x 10-32	
28	1	ELL1032X	ELBOW 10-32	
29	1	N/A	TUBING 1/8" O.D. (CLEAR)	
30	1	N/A	TUBING 1/8" O.D. (RED)	
31	1	N/A	TUBING 1/8" O.D. (BLUE)	
32	1	N/A	TUBING 1/8" O.D. (BLACK)	
33	1	PNCM0406	REGULATOR 1/2 NPT	
34	2	GPREG08W	HOSE FITTING 1/2 NPT x 1/2 JIC	
35	4	HE08P08B	HOSE 1/2	
36	2	HOSEPL08	ELL 1/2 NPT PLATED STREET 90°	
37	3	PL08P590	HOSE FITTING 1/2 JIS SWIVEL	
38	1	HE0812H	ELL 1/2 NPT PLATED 90° FEM	
39	1	PL08P090	PIPE STREET TEE 1/2 NPT PLATED	
40	1	PT08PSTR	MALE PIPE TEE 1/2 NPT PLATED	
41	1	PT08MALE		



Bill Of Materials

ITEM #	QTY	PART NO.	DESCRIPTION	WGT.
1	2	BK100806	CIRCUIT BOX 10 x 8 x 6	
2	1	PCF2M00	CRO-FOOT 3/4" NPT MALE	
3	1	V8B12DR	BALL VALVE 3/4" NPT BRASS	
4	3	PN12PH00	W/ SAFETY EXHAUST	
5	2	PT12PS00	HEX NIPPLE 3/4" NPT PLATED	
6	1	GFPL12M	PIPE TEE 3/4" NPT PLATED STEEL	
7	1	GFPL12M	FILTER 3/4" NPT METAL BOWL	
8	1	GFPL12M	W/ IMPLUSE DRAIN	
9	1	PS0402PS	LUBRICATOR 3/4" NPT METAL BOWL	
10	1	PT04MBR	CAP 3/4" NPT SS	
11	1	GFPL04P	SWAGE NIPPLE 1/4" NPT x 1/8" NPT	
12	1	G20004RM	MALE BRANCH TEE 1/4" NPT	
13	1	JP121200	MINI FILTER 1/4" NPT	
14	1	HE1212H	PRESSURE GAUGE 0-200 PSI	
15	1	HOSE0750	1/4" NPT REAR MOUNT	
16	6	PL08P590	ADP 3/4" NPT x 3/4" JIC STR	
17	1	JP080800	HOSE FTG 3/4" JIC SWIVEL FOR 3/4" HOSE	
18	1	HE04P04H	HOSE 3/4" ID HYD/AIR USE	
19	1	HE04P04H	ELL 1/2" NPT PLATED STREET 90°	
20	2	HOSE0250	ADP 1/2" NPT x 1/2" JIC	
21	3	HE04P04H	PIPE ELL MALE 1/4" NPT PLATED	
22	3	JP040402F	HOSE FTG 1/4" NPT x 1/4" HOSE	
23	3	JU040408H	HOSE 1/4" ID HYD/AIR USE	
24	2	SP0808040	HOSE FTG 1/4" JIC x 1/4" HOSE	
25	1	RLC00060	BULKHEAD ADP 1/4 JIC x 1/8" NPT	
26	1	RLC00060	ADAPTER 1/4" JIC BULKHEAD	
27	1	RLC00060	PIPE 1/2" SCH 40 304 SS	
28	1	RLC00060	REPAIR UNION FOR 1/2" PIPE	

No. REVISION DATE

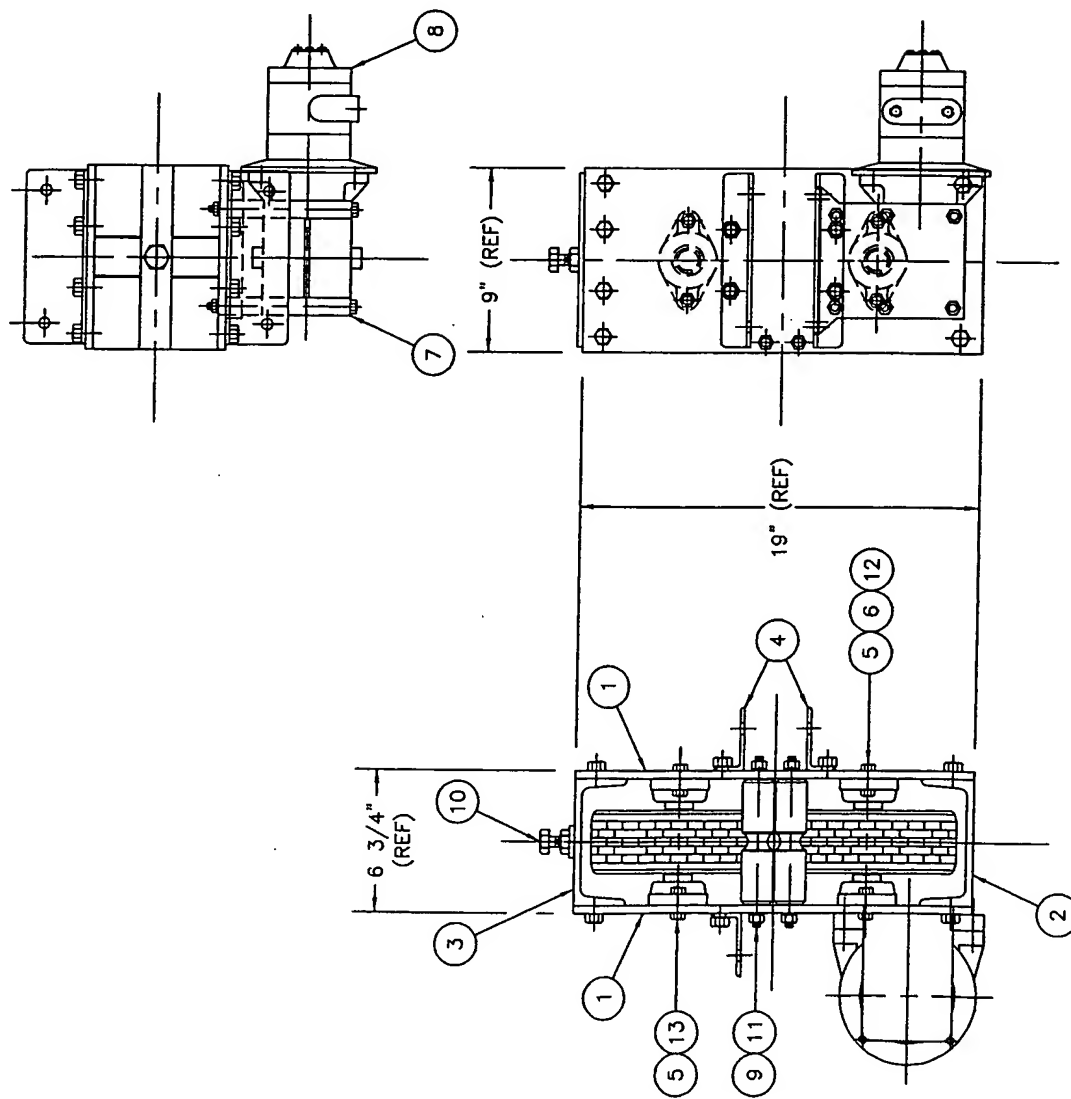
JSA
JETTING SYSTEMS & ACCESSORIES, INC.
4026 TREY
HOUSTON, TEXAS 77084
ROTARY LINE CLEANER

TOLERANCES
UNLESS OTHERWISE SPECIFIED
FRACTIONS DECIMALS
X .000
XX .001
XXX .005
ANGLES ±0°-30°
MACHINED SURFACES 125 / (RA3)
REMOVE ALL BURRS AND
BROKEN SHARP EDGES TO
DO NOT SCALE

PNEUMATIC ASSEMBLY - 10K RLC
DNE A.D.F.
DRAWN BY R.L.F.
SCALE N.T.S.
REV. 0
DIED 09/01/00 SHEET 1 OF 3 LCR.PNMT75101

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ITEM	#PCS	QTY	PART NO.	DESCRIPTION	WGT.
1	2	2	RLC00044	PINCH ROLLER PLATE 20/36	
2	1	1	RLC00042	DRIVE END PLATE PINCH ROLLER	
3	1	1	RLC00043	IDLER END PLATE PINCH ROLLER	
4	3	3	RLC00048	MOUNTING ANGLE	
5	3	3	FLNG1000	FLANGE BEARING 1" 2-BOLT	
6	1	1	FLNG1250	FLANGE BEARING 1 1/4" 2-BOLT	
7	1	1	20GEDA25	GEAR BOX C-FACE 25:1	
8	1	1	AWGST6AM	AIR MOTOR GAST 6AM 8 VANE	
9	2	2	RLC00099	GUIDE ROLLER - 7/16 RADIUS	
10	1	1	RLC00079	DRIVE TENSIONER BRACKET	
11	2	2	RLC00064	GUIDE ROLLER SHAFT 1/2"-13	
12	1	1	RLC00089	DRIVE SHAFT / TIRE ASSEMBLY	
13	1	1	RLC00120	IDLER SHAFT / TIRE ASSEMBLY	
14			N/A	LOCK NUT 1/2-13 UNC C.S.	
15			N/A	HH BOLT 1/2-13 UNC	
16			N/A	LOCK NUT 3/8-16 UNC C.S.	
17			N/A	HH BOLT 3/8-16 UNC	



TOLERANCES

UNLESS OTHERWISE SPECIFIED

FRACTIONS ±1/64

X DECIMAL ±.030

XX DECIMAL ±.020

XXX DECIMAL ±.005

ANGLES ±0°-30'


MACHINED SURFACES 125° (RMS)

REMOVE ALL BURRS AND

BREAK SHARP CORNERS .015 ±.005

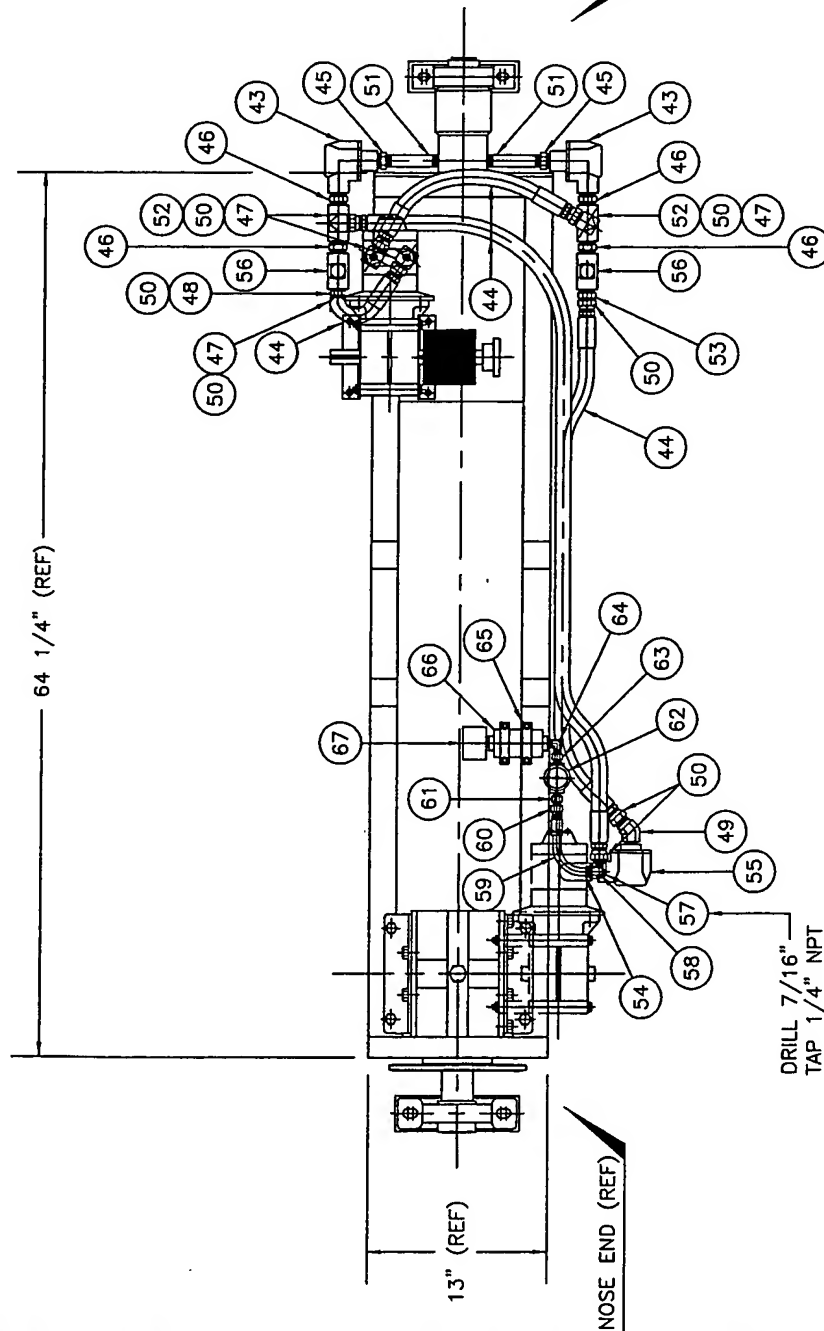
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ROTARY LINE CLEANING	
PINCH ROLLER ASSEMBLY	
ENCL	J.O.F.
FORM BY	R.O.F.
SCALE	N.T.S.
DATE: 06/21/00	SHT. 1 OF 1
DRAWING NO. PNC0 A/C NAME LCR.PNC0	


Bill Of Materials

ITEM	#PCS	QTY	PART NO.	DESCRIPTION	WGT.
43	2	2	GRQE5000	QUICK EXHAUST VALVE 3/4" NPT	
44	4	4	HOSE0750	HOSE 3/4" ID HYD/AIR USE	
45	2	2	PIB1208PS	PIPE BUSHING 3/4" x 1/2" PLATED	
46	4	4	PH12PH00	HEX NIPPLE 3/4" NPT PLATED	
47	2	2	JP12129X	ADP 3/4" NPT x 3/4" JIC 90°	
48	1	1	JP121290	ADP 3/4" NPT x 3/4" JIC 90°	
49	1	1	JP081245	ADP 1/2" NPT x 3/4" JIC 45°	
50	8	8	HE1212H	HOSE FTG 3/4" JIC x 3/4" HOSE	
51	2	2	PH08FD40	NIPPLE 1/2" NPT x 4" SCH 40	
52	2	2	PT12PS00	PIPE TEE 3/4" NPT PLATED STEEL	
53	1	1	JP121200	ADP 3/4" NPT x 3/4" JIC	
54	1	1	PH08FGLS	HEX NIPPLE 1/2" NPT x CLS	
55	1	1	GRQE4000	QUICK EXHAUST VALVE 1/2" NPT	
56	2	2	VLADJ12	ADJUSTABLE/METERING VALVE 3/4"	
57	1	1	JP081290	ELL 1/2" NPT x 3/4" JIC 90°	
58	1	1	HE02P04H	HOSE FTG 1/8" NPT x 1/4" HOSE	
59	1	1	HOSE0250	HOSE 1/4" ID HYD/AIR USE	
60	1	1	HE04P04H	HOSE FTG 1/4" NPT x 1/4" HOSE	
61	1	1	JP04802F	BULKHEAD ADP 1/4" JIC x 1/8" NPT	
62	1	1	GRRG0200	REGULATOR 1/8" NPT	
63	1	1	PH02BHEX	HEX NIPPLE 1/8" NPT BRASS	
64	1	1	PL02PS90	STREET ELL 1/8" NPT PLATED 90°	
65	1	1	RLC00084	MOUNTING BRACKET-DRUM BRAKE	
66	1	1	RLC00086	AIR CYLINDER 1 1/2" BORE	
67	1	1	RLC00085	DRAG BRAKE-DRUM BRAKE	



SWIVEL END (REF)

NOSE END (REF)

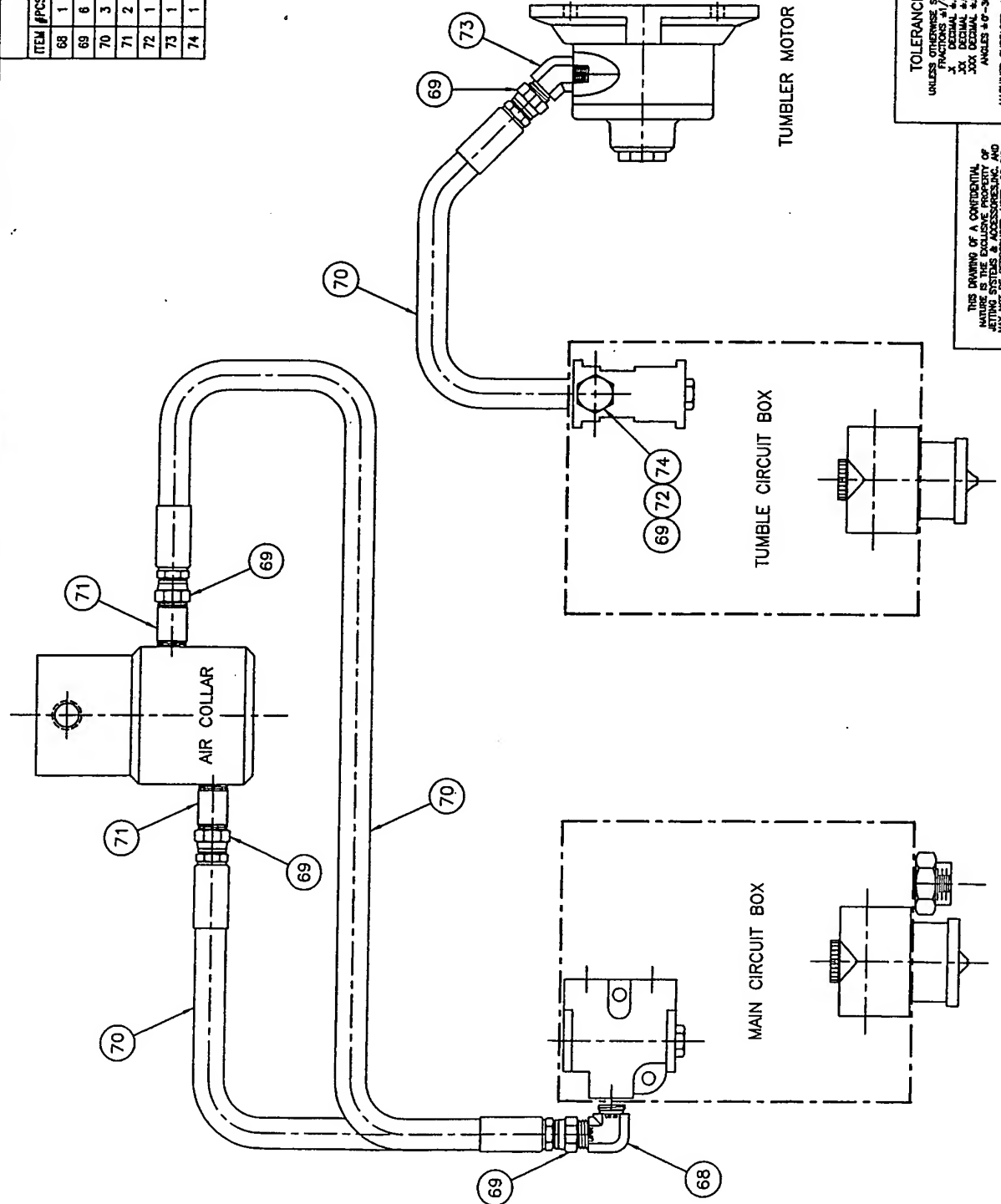
No.	REVISION	DATE
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ROTARY LINE CLEANER		
PNEUMATIC ASSEMBLY - 10K RLC		
DWG. 427.	ISSUED NO.	PNMT7510
ISSUED BY: RUF.	ISSUED NAME	
SCALE: N.T.S.	REV.	0
DWG. 02/04/00	SHEET 2 OF 3	LCR.PNMT75102

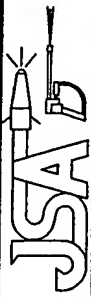
TOLERANCES
UNLESS OTHERWISE SPECIFIED
X. FRACTIONAL ±.015
XX. DECIMAL ±.010
XXX. DECIMAL ±.005
ANGLES 90°-30°
MACHINED SURFACES (R) (RMS)
REMOVE ALL BURRS AND
BREAK SHARP EDGES TO .010 & .005
DO NOT SCALE

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Bill Of Materials

ITEM #	QTY	PART NO.	DESCRIPTION	WGT.
68	1	JP080890	ADP 1/2" NPT X 1/2" JIC 90°	
69	6	HC08P08H	HOSE FTG 1/2" NPT x 1/2" HOSE	
70	3	HOSE0500	HOSE 1/2" ID HYD/AIR USE	
71	2	PN08F020	NIPPLE 1/2" NPT x 2" SCH 40	
72	1	JP08080F	ADP 1/2" NPT (F) x 1/2" JIC	
73	1	JP040845	ADP 1/4" NPT x 1/2" JIC 45°	
74	1	PN08F045	NIPPLE 1/2" NPT x CLOSE SCH 40	



No.	REVISION	DATE
 JETTING SYSTEMS & ACCESSORIES, INC. 4026 TREY HOUSTON, TEXAS 77084 ROTARY LINE CLEANER		
PNEUMATIC ASSEMBLY - 10K RLC		
ENG. J.D.F.	DRAWING NO.	PNMT7510
DRAWN BY: R.J.F.	SCALE: N.T.S.	REV. 0
DATE: 04/04/00	SHEET: 3 OF 3	LCR.PNMT75103

TOLERANCES
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 FRACTIONS 31/64
 DECIMALS .000
 ANGLES 30°-30'

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Bill Of Materials

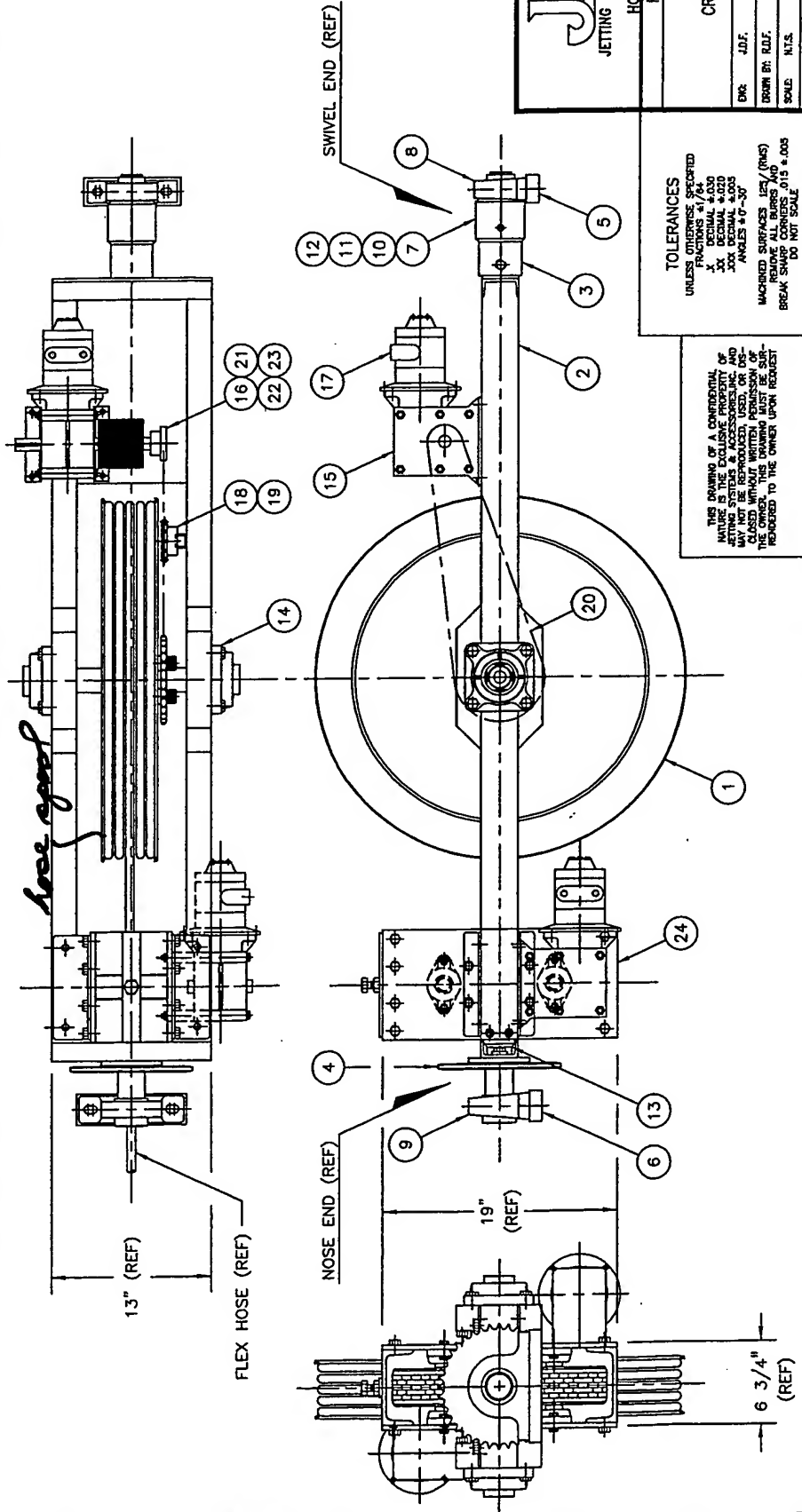
ITEM	QTY	PART NO.	DESCRIPTION	WGT.
1	1	DRUM7510	ASSEMBLY 10K HOSE REEL	108.5
2	1	CRDL6413	CRADLE WELDMENT	78.7
3	1	RLC00100	DUAL PORT SWIVEL	14
4	1	RLC00057	CRADLE DRIVE SPROCKET	8.5
5	1	RLC00045	BEARING MOUNT - INLET	
6	1	RLC00046	BEARING MOUNT - NOSE	
7	1	RLC00001	SWIVEL AIR COLLAR	6.0
8	1	PLBL1750	PILLOW BLOCK BEARING 1 3/4	4.0

Bill Of Materials

ITEM	QTY	PART NO.	DESCRIPTION	WGT.
9	1	PLBL2187	PILLOW BLOCK BEARING 2 3/16	5.0
10	1	RLC00073	PNEUMATIC SWIVEL WASHER	
11	3	ORB90334	O-RING 334 Buna 90 DURA-PAK	
12	4	BUB90334	BACK-UP RING 334 Buna 90	
13	1	RLC00063	HOSE GUIDE	
14	2	FLN41937	FLANGE BEARING 1 15/16"	
15	1	RLC00119	GEARBOX MODIFICATION	
16	1	SP60BS10	SPROCKET 60BS10	

Bill Of Materials

ITEM	QTY	PART NO.	DESCRIPTION	WGT.
17	1	AMGSTEAM	AIR MOTOR GAST 6AM	
18	1	CHNTIGHT	CHAIN TIGHTNER	
19	1	SP60ID13	IDLER SPROCKET #60	
20	1	CHN00060	CHAIN #60	
21	1	CLTCH16B	CLUTCH 1" BALL BEARING TYPE	
22	1	RLC00081	RETAINER-DRUM CLUTCH	
23	1	RLC00082	SPROCKET SHAFT-DRUM CLUTCH	
24	1	PNC7510	PINCH ROLLER ASSEMBLY	



TOLERANCES
 UNLESS OTHERWISE SPECIFIED
 FRACTIONS $\pm 1/64$
 DECIMAL $\pm .030$
 ANGLES $\pm .030$
 HOLE DIA. $\pm .003$
 ANGLES $\pm 0-30'$
 MACHINED SURFACES 125μ (RMS)
 BREAK SHARP CORNERS $.015 \pm .005$
 DO NOT SCALE

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JSA
 JETTING SYSTEMS & ACCESSORIES, INC.
 4006 TREY
 HOUSTON, TEXAS 77084
 ROTARY LINE CLEANER

CRADLE ASSEMBLY - 10K

DWR J.D.F.
 DRAWN BY R.D.F.
 SCALE N.T.S.
 DATE 06/14/00
 REV. 0
 LCR.CRD7510